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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/512,107	02/24/2000	Munehito Kumagai	50073-028	5851

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EXAMINER

DUONG, THOI V

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 09/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/512,107

Applicant(s)

KUMAGAI ET AL.

Examiner

Thoi V Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 ~~is/are~~ pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 ~~is/are~~ rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it contains more than 150 words. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 3 recites the limitation "the masks" in line 3 of the claim. There is insufficient antecedent basis for this limitation in the claim.
4. Claims 8-12 recites the limitation "the reflection type liquid crystal display" in line 1 of each claim. There is insufficient antecedent basis for this limitation in the claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 7-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuda et al. (USPN 6,262,783 B1) in view of Dunn et al. (USPN 5,877,835).

As shown in Figs 1 and 2, Tsuda discloses a reflection type liquid crystal display comprising:

an insulating substrate 201; scanning lines 204, a scanning electrode 203, and common electrode 205 wiring formed on said insulating substrate; an insulating film 207

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formed on said scanning lines, said scanning electrode and said common electrode wiring; a semiconductor layer 208 (Fig. 3C) formed on said scanning electrode through said insulating film; a first electrode 212 and a second electrode 213 forming a semiconductor element with said semiconductor layer, and signal lines 211 connected to said first electrode;

an innerlayer photosensitive insulating film 230 which is formed on said first electrode, said second electrode and said signal lines, absorbs difference in level of said scanning lines, said first electrode, said second electrode and said signal lines, and possesses minute unevenness on the surface (col. 9, lines 12-25);

a first transparent substrate 201 (col. 1, lines 52-54) having a reflex picture element electrode 423 composed of a high reflex metal film Al (col. 9, lines 47-50) having a configuration transferred to said interlayer insulating film as the unevenness on the surface of said interlayer insulating film and electrically connected to said second electrode through a contact hole provided in said interlayer insulating film; and

a second transparent substrate 301 sandwiching and holding a liquid crystal material with said first substrate (col. 1, lines 52-54), which is provided with a color filter 303, an opposed electrode 303 and so on,

wherein said semiconductor film is formed in a picture element region excluding the region where said scanning lines, said signal lines, and said the contact hole are formed.

Tsuda also discloses a method for manufacturing the above reflection type liquid crystal display shown from Figs. 3A to 5D, comprising a process of forming an interlayer

insulating film having appropriate unevenness of an inseparable pattern in the picture element region and having a contact hole of a separable pattern on a drain electrode (second electrode) of said semiconductor element by plainly applying a photosensitive insulating resin on said substrate so as to dissolve difference in level caused by said scanning lines, said signal lines, said semiconductor element, and so on, and conducting exposure and development while changing an amount of exposure (col. 8, lines 66-67 and col. 9, lines 1-54).

Tsuda discloses a reflection type liquid crystal display that is basically the same as that recited in claims 1 and 7-17 except for forming an ultraviolet (UV) light cut film on one of said two transparent substrates. Dunn et al. discloses a method of manufacturing a liquid crystal display comprising a step of adding an UV light cut film on the surface of a glass substrate to prevent UV transmission (col. 2, lines 42-60). Accordingly, the insulating substrate can be added with an UV light cut film such that the entire surface comprising the display portion does not permit any ultraviolet light to transmit therethrough. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the reflection type liquid crystal display of Tsuda with the teaching of Dunn by forming an UV light absorption film or UV light cut film on one face or both faces of a transparent insulating substrate or between two transparent insulating substrates so as to prevent UV transmission and hence aid in stabilizing the long-term driving voltage of the display.

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7. Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuda et al. (USPN 6,262,783 B1) in view of Dunn et al. (USPN 5,877,835) as applied to claims 1 and 7-17 above and further in view of Aggas et al. (USPN 5,994,157).

Tsuda discloses a method for manufacturing a reflection type liquid crystal display comprising a process for forming an innerlayer insulating film 420 using a gate signal line 204 and the common electrode line 205 made of a light-shielding material as a mask (col. 5, lines 27-29 and col. 9, lines 1-10) as shown in Fig. 4A. As known in the art, a Cr/CrOx film may be used as a light-shielding material. As modified in view of Dunn, a UV light cut film is added to the transparent substrate 201 of the device of Tsuda in Fig. 2 as described above (paragraph 6). Accordingly, the mask used in exposing the insulating resin has a shading material comprised of two layers including an UV light cut film for cutting UV rays. However the device of Tsuda as modified in view of Dunn above does not include an UV light cut film for cutting UV rays at a predetermined value of 20 to 80 % in a base material as recited in claims 2-6. As shown in Fig. 2(a), Aggas discloses a UV light cut film 20 provided on a glass substrate 61 for cutting about 80 % of the UV rays and made of amorphous silicon (a-Si) (col. 7, lines 10-37). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the method for manufacturing a reflection type liquid crystal display of Tsuda with the teaching of Aggas by forming a mask used in exposing the insulating resin having a shading material comprised of at least two layers including an ultraviolet filter layer for cutting ultraviolet rays at a predetermined value of 20 to 80 % in a base material such as glass, and said ultraviolet filter layer is

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laid in a mask pattern opening portion located conforming to the picture element region and so as to obtain a uniformity for the display due to the elimination of the stepper exposure device.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (703) 308-3171. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm.

Thoi Duong



09/07/2002



William L. Sikes
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